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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,580	08/29/2001	Keith Hankin	80168-0238	5009

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HOGAN & HARTSON LLP
ONE TABOR CENTER, SUITE 1500
1200 SEVENTEEN ST.
DENVER, CO 80202

EXAMINER	
VEILLARD, JACQUES	

ART UNIT	PAPER NUMBER
2175	7

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,580	HANKIN ET AL.	
	Examiner	Art Unit	
	Jacques Veillard	2175	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Applicant's communication filed on 8/29/2001.

2. Claims 1-44 are pending and presented for examination.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 11/12/2002 (Paper No. 5) was filed after the mailing date of the application on 8/29/2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 23, the claim recites the limitation "said second searching step" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 suffers the same deficiency in virtue of dependency.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Baer et al.(U. S. Pat. No. 6,035,303, hereinafter Baer).

As per claim 1, Baer discloses an object management system for storing persistent. objects for an application accessing data, wherein said persistent objects are stored in at least one data source (See the abstract and col.1, lines 42-44). In particular, the system taught by Baer comprising: a persistent object framework to provide data from and perform functions on said persistent objects in accordance with said application (See Fig.2 and corresponding text); and a cached set of persistent objects within said persistent object framework identified by said application and corresponding to said stored persistent objects, as objects stored (See fig.1 components 150, 151 and corresponding text).

As per claim 2, Baer discloses the claimed invention, wherein said application is a Java servlet (See components 230, 250 and corresponding text).

As per claim 3, Baer discloses the claimed invention, wherein said functions include a function to create a persistent object.(See the abstract).

As per claim 4, Baer discloses the claimed invention, wherein said functions include a function to cache a persistent object (See Fig.1 component 160 and corresponding text).

As per claim 5, Baer discloses the claimed invention, wherein said functions include a function to update a persistent object (See col.2, lines 5-7).

As per claim 6, Baer discloses the claimed invention, wherein said persistent object framework includes a set of data models corresponding to said stored persistent objects (See col.1, lines 21-22).

As per claim 7, Baer discloses the claimed invention, wherein said persistent object framework includes an object space to map said persistent objects to locations within said at least one data source (See the abstract lines 12-16, col..5, lines 25-26, and col.6, lines 34-39).

8. Claims 33, 41 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuh et al.(U. S. Pat. No. 6,065,013, hereinafter Fuh).

As per claim 33, Fuh discloses a storage mechanism for persistent objects in a relational database management system and an application accessing said persistent object for data (See the Title and the abstract), comprising: executing a process of said application accessing said persistent object, wherein said persistent object includes a revision attribute (See abstract, Fig.5, col.2, lines 5-20, col.4, line 53 through col.5, line 3 and col.8, lines 11-26); identifying said stale data state within said persistent object by a persistent object framework (See col.11, lines 1-27),

retrying said process of said application accessing said persistent object (See Fig.9, and col.10, lines 34-63); and incrementing said revision attribute (See col.3, lines 16-31, col.6, lines 16-46, and col.8, lines 11-26).

As per claims 41 and 42, the claims have substantially the same limitations as claim 33. Except that claim 44 is directed to a computer program. These limitations are already discussed in the rejection of claim 12. Therefore, they are rejected on similar ground corresponding to the arguments given for the rejected claim 33 above.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 8-21, 35 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Baer et al.(U. S. Pat. No. 6,035,303, hereinafter Baer) in view of Sanchez, II et al.(U. S. Pub. No. 2002/0147857, hereinafter Sanchez).

As per claim 8, Baer teaches an object management system for storing persistent objects supported by a Java programming environment (See abstract, Fig.2 components 230,250 and corresponding text). As to a relational database storing a first set of persistent objects correlating to an application, Baer achieves this limitation by providing a database table for storing set of persistent objects (See col.5, lines 58) the database table taught by Baer corresponds to a

relational database. Baer does not teach a LDAP repository storing a second set of persistent objects correlating to said application; and a persistent object framework. to provide data to said application from said first and second sets of persistent objects, wherein said persistent object framework caches a subset of said first and second persistent objects from said relational database and said LDAP repository.

However, Sanchez teaches a method and apparatus for mapping and dynamically storing Java objects in a LDAP repository (See the title and the abstract) including a LDAP repository storing a second set of persistent objects correlating to said application (See Fig.2 component 26 and corresponding text); and a persistent object framework to provide data to said application from said first and second sets of persistent objects, wherein said persistent object framework caches a subset of said first and second persistent objects from said relational database and said LDAP repository (See Fig.2, page 1, right column section 8 through page 2, left column section 12 and page3, left column section 28 through section 33 at the right column).

It would have been obvious to a person of ordinary skill in the art at the time of the Applicant's invention was made to modify the teachings of Baer with the teachings of Sanchez to include a database table(relational database) in conjunction with Sanchez LDAP repository in order for a user or users to store a first set and a second set persistent objects and cache a subset of them from the database table and the LDAP repository.

As per claim 9, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising JDBC services coupling said persistent object framework with said relational database (See Baer's Fig.2 component 230 , col.4, lines 40-46 and col.6, lines 55-57).

As per claim 10, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising business objects identified by said application and corresponding to said stored sets of persistent objects (See Sanchez's page 3, section 28: wherein the object manager other objects and provides access to various consumers).

As per claim 11, the combination of Baer and Sanchez, as modified, teaches the claimed invention, wherein said persistent object framework includes a set of data models to create said persistent objects (See Baer's col.1, lines 21-22).

As per claim 12, Sanchez teaches method for managing persistent objects correlating to an application (See Fig.2, components 40, 44, 48 and corresponding text), comprising: mapping a persistent object stored within a data source with a persistent object framework coupled to said application (See abstract and page 1 section 8). Sanchez does not teach identifying said persistent object stored in said data source as applicable to said application; and caching said persistent object within said persistent object framework.

However, Baer teaches an object management system for storing persistent objects supported by a Java programming environment (See abstract, Fig.2 components 230,250 and corresponding text) including identifying said persistent object stored in said data source as applicable to said application (See the abstract and col.1, lines 42-44); and caching said persistent object within said persistent object framework (See fig.1 components 150, 151 and corresponding text).

. It would have been obvious to a person of ordinary skill in the art at the time of the Applicant's invention was made to modify the teachings of Baer with the teachings of Sanchez because Baer provides a data source as a database (database table) wherein the persistent objects can be identified and an object server in conjunction an object store and a client cache wherein the persistent objects can be cached (See Fig.1).

As per claims 35 and 36, the claims have substantially the same limitations as claim 12. Except that claim 36 is directed to a computer program. These limitations are already discussed in the rejection of claim 12. Therefore, they are rejected on similar ground corresponding to the arguments given for the rejected claim 12 above.

As per claim 13, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising creating said persistent object according to a data model stored by said persistent object framework (See Baer's col.1, lines 21-22).

As per claim 14, the combination of Baer and Sanchez, as modified, teaches the claimed invention, wherein said creating includes determining initial values for attributes within said data model (See Baer's col.3, line 47 through col.4, line 5).

As per claims 15 and 20, the combination of Baer and Sanchez, as modified, teaches the claimed invention, wherein said creating includes updating a revision indicator within said data model (See Baer's col.2, lines 6-7 "updating objects stored in the object servers").

As per claim 16, the combination of Baer and Sanchez, as modified, teaches the claimed invention, wherein said creating includes determining a persistent object identity for said newly created persistent object (See Baer's col.5, lines 42-48).

As per claim 17, the combination of Baer and Sanchez, as modified, teaches the claimed invention, wherein said creating includes defining subtypes for said newly created persistent object (See Baer's col.4, lines 33-43).

As per claim 18, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising saving said persistent object by said persistent object framework (See Baer's col.3, lines 25-26 "using a digital library for storing persistent objects in order to save them").

As per claim 19, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising accessing said persistent object by said persistent object framework (See Baer's col.1, lines 40-44, col.5, lines 6-8, col.6, lines 26-27 and lines 34-36).

As per claim 21, the combination of Baer and Sanchez, as modified, teaches the claimed invention, further comprising deleting said persistent object by said persistent object framework (See Baer's col.4, line 64 "deleting data object in the digital library").

11. Claims 22-30, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuh et al. (U. S. Pat. No. 6,065,013, hereinafter Fuh) in view of Hill et al. (U. S. Pat. No. 6,453,321, hereinafter Hill).

As per claim 22, Fuh teaches an implemented computer storage method for searching persistent objects stored in database management system, wherein an application accesses said persistent objects for data (See Title and abstract). Similarly, Fuh's method comprising: receiving a search query for a persistent object at a persistent object framework (See col.3, lines 20-23); determining a query type for said search query (See col.3, lines 23-31). Fuh does not teach searching a cache within said persistent object framework for said persistent object according to said query type; and searching said data source when said persistent object is not within said cache.

However, Hill teaches a structured cache for persistent objects includes the features of: searching a cache within said persistent object framework for said persistent object according to said query type (See Fig.7, col.4, lines 61-66, and col.16, lines 42-63); and searching said data source when said persistent object is not within said cache (See col.4, lines 30-37 and col.16, line 63 through col.17, line9).

It would have been obvious to a person of ordinary skill in the art at the time of the Applicant's invention was made to modify the teachings of Fuh with the teachings of Hill because Hill provides a structured cache technique wherein data can be efficiently retrieved therefrom when needed in response to a database query (See col.3, lines 62-64), and creating a data cache from the retrieved result set.

As per claims 23 and 24, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said second searching step includes enabling a lazy load state and determining whether said persistent object data is needed by said application (See Hill's col.9, line 56 through col.10, lines 4).

As per claim 25, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said searching steps comprise searching by a primary key (See Hill's col.5, lines 7-22, and col.16, lines 60-64).

As per claim 26, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said searching steps comprise searching by a handle (See Hill's col.5, lines 45-50).

As per claim 27, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said searching steps comprise searching by a unique key (See Hill's Fig.4C col.9, lines 1-3 "assigning an owner primary key and a member primary key as a unique key").

As per claim 28, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said searching steps comprise searching by query filter (See Hill's Figs 6 and 8 "Hill achieves this by populating the association cache, and showing how it is used to retrieve the member objects of an association").

As per claim 29, the combination of Fuh and Hill, as modified, teaches the claimed invention, wherein said searching steps comprise searching by relationship (See Hill's col.10, lines 5-18).

As per claim 30, the combination of Fuh and Hill, as modified, teaches the claimed invention, further comprising discarding said search query (See Hill's col.17, line 61).

As per claims 37 and 38, the claims have substantially the same limitations as claim 22. Except that claim 38 is directed to a computer program. These limitations are already discussed in the rejection of claim 22. Therefore, they are rejected on similar ground corresponding to the arguments given for the rejected claim 22 above.

12. Claims 31, 32, 34, 39, 40, 43, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Hill et al. (U. S. Pat. No. 6,453,321, hereinafter Hill).

As per claim 31, Hill discloses a structured cache method to increase the efficiency of reading persistent objects from a database according to relationships between said persistent objects, wherein an application accesses said persistent objects for data (See the Title, the abstract and col.1, lines 5-10), comprising: specifying a relationship between at least two objects (See col.4, lines 5-7, and col.12, lines 38-45); retrieving said at least two objects according to said relationship (See col.13, lines 5-19); performing a function on said relationship (See col.8, lines 42-49, and col.10, lines 5-33); and synchronizing another relationship between said at least two objects according to the result of said function (See col.17, lines 60-65).

As per claim 32, Hill discloses the claimed invention; further comprising storing said relationship (See Fig.4A, and col.10, lines 56-61).

As per claims 39 and 40, the claims have substantially the same limitations as claim 31. Except that claim 40 is directed to a computer program. These limitations are already discussed in the rejection of claim 31. Therefore, they are rejected on similar ground corresponding to the arguments given for the rejected claim 31 above.

As per claim 34, Hill discloses a structured cache method for managing persistent objects within an application system, wherein said persistent objects are stored within a first data source and a second data source and said persistent objects provide data to an application (See 5, lines 10-12), comprising: implementing a persistent object framework that caches said persistent objects correlating to said application by: creating said persistent objects (See Abstract lines 1-2, col.3, lines 54-56, col.4, lines 23-29, and line 33, and col.14, lines 31-34); caching said persistent objects (See Abstract lines 3-4, col.4, line 59 through col.5, line 10); accessing said persistent objects (See col.4, lines 42-47, and col.5, lines 39-51); updating said persistent objects (See col.18, lines 8-23); searching said persistent objects (See col.4, lines 48-50, col.5, lines 7-16, and col.16, lines 42-45); deferring writes to said first and second data sources(See col.5, lines 1-9, Hill achieves that by issuing a second database query from the database, if the search fails to locate the objects association cache) ; and controlling persistent storage of said persistent objects

(See col..15, lines 1-54, and col.16+, lines 8-21); and retrieving said data from said first and second data sources when requested by said persistent object framework (See col.5, lines 10-17).

As per claims 43 and 44, the claims have substantially the same limitations as claim 34. Except that claim 44 is directed to a computer program. These limitations are already discussed in the rejection of claim 34. Therefore, they are rejected on similar ground corresponding to the arguments given for the rejected claim 34 above.

Other Prior Art Made of Record

13. Clegg et al. U. S. Pat. No. 6,356,946,
Bruso et al. U. S. Pat. No. 6,615,219,
Joseph et al. U. S. Pat. No. 5,787,280,
Dechamboux U. S. Pat. No. 6,052,528,
Menon U. S. Pat. No. 6,615,204, and
Blackman et al. U. S. Pat. No. 5,765,162.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. **Any response to this action should be mail to:**

Commissioner of Patent and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 746-7239 (for formal communication intended for entry)

Or:

(703) 746-7240 (for informal of draft communications, please label "PROPOSED" or "DRAFT")

Hand - delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA, Fourth Floor Lobby (Receptionist Telephone No. (703) 305-3900).

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques Veillard whose telephone number is (703) 305-7094. The examiner can normally be reached Monday through Friday from 9:30 AM to 4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached on (703) 305-3830. The fax phone number for this group is (703) 308-5403.

Charles Rones

CHARLES RONES
PRIMARY EXAMINER

J.V

Jacques Veillard
Patent Examiner TC 2100

February 20, 2004